AF/1723

**PATENT**
Attorney Docket No. 168567



**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Application of:

CONNORS et al.

Application No. 09/091,508

Filed: October 30, 1998

For: SEPARATION ARRANGEMENT

Art Unit: 1723

Examiner: K. Menon



**TRANSMITTAL OF APPELLANTS' REPLY BRIEF**

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

In accordance with 37 CFR 1.192, appellants hereby submit Appellants' Reply Brief in triplicate.

The items checked below are appropriate:

1. **Status of Appellants**

This application is on behalf of ☒ other than a small entity or ☐ a small entity.

2. **Oral Hearing**

☐ Appellant requests an oral hearing in accordance with 37 CFR 1.194.
☐ Appellant requested an oral hearing in accordance with 37 CFR 1.194 at the time appellant filed Appellant's Brief on Appeal.

3. **Extension of Time**

☐ Appellants petition for a one-month extension of time under 37 CFR 1.136, the fee for which is $110.00.

☒ Appellants believe that no extension of time is required. However, this conditional petition is being made to provide for the possibility that appellants have inadvertently overlooked the need for a petition and fee for extension of time.

**Extension fee due with this request:** $

**4. Total Fee Due**

The total fee due is:

| | |
|---|---|
| Request for Oral Hearing | $ 0.00 |
| Extension Fee (if any) | $110.00 |

**Total Fee Due:** $

**5. Fee Payment**

☐ Attached is a check in the sum of $ .
☐ Charge Account No. 12-1216 the sum of $ . A duplicate of this transmittal is attached.

**6. Fee Deficiency**

☒ If any additional fee is required in connection with this communication, charge Account No. 12-1216. A duplicate copy of this transmittal is attached.

Respectfully submitted,

Shannon Schemel

Shannon Schemel, Reg. No. 47,926
LEYDIG, VOIT & MAYER
700 Thirteenth Street, N.W., Suite 300
Washington, DC 20005-3960
(202) 737-6770 (telephone)
(202) 737-6776 (facsimile)

Date: October 16, 2003
SDS:ves

**PATENT**
Attorney Docket No. 168567

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**
**BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

In re Application of:

CONNORS et al.

Application No. 09/091,508

Filed: October 30, 1998

For: SEPARATION ARRANGEMENT

Art Unit: 1723

Examiner: K. Menon

**APPELLANTS' REPLY BRIEF**



Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

In response to the Examiner's Answer mailed October 2, 2003, Applicants provide this reply Brief, being filed in triplicate, pursuant to 37 C.F.R. 1.193(b).

The claims are directed to a separation element including two or more hollow pleated pack sections and open joiner caps attached to at least one end of each of the two or more pack sections. The adjacent open joiner caps are secured to coaxially connect the pack sections and open joiner caps into a single larger element.

In his Answer, the Examiner asserts that Pall '923 teaches two filters coupled together with open joiner caps to coaxially connect them. Although Pall '923 does disclose a primary filter and a reserve filter disposed in end-to-end relation in a housing, the primary and reserve filters *do not* include open joiner caps and *do not* function as a single longer element.

Joiner end caps are end caps that can be connected to make two (or more) shorter pack sections into a single larger element, as set forth in claim 1. For example, as explained in the present specification, "longer filter elements may be constructed, for example, *by joining open end caps, e.g., joiner caps"* and "a string of short filter elements are then connected end-to-end to form a long filter element by *joining the open joiner cap of one short filter element to the open joiner cap of an adjacent short filter element*" (page 43, line 21-25)(emphasis added); "Once the joiner caps are attached to the ends of the filter pack sections, the joiner caps may be secured *to one another* to form larger sections" (page 45, lines 4-5).

The end caps (**18, 25**) of Pall '923 are *not* joiner caps and are *not joined to one another*. Rather, the end caps are *separated* from one another both physically and functionally, by a relief valve assembly comprising an adapter 19, a valve plate 50, a Belleville spring disc 51, and ports 52 (see column 4, lines 5-22). As clearly seen in Figures 1-3, the adapter 19 and a wave-form spring **23** are disposed between end caps **18** and **25**. Furthermore, Pall '923 makes clear that the end caps **18** and **25** are separated. For example, Pall '923 states, "two annular filters in end-to-end relation within the housing *separated* by an annular adapter" (Abstract)(emphasis added); "the lower end cap **18** rests upon the insert or adapter ring **19** . . ." and "lower end cap **18** has a downwardly extending inner flange fitting snugly against ring **19** and a fluid-tight seal therebetween is ensured by O-ring **22**" (col. 3, lines 23).

Nowhere does Pall '923 teach that the end caps **18** and **25** are joiner caps or even that the end caps are joined to one another. Indeed, Pall '923 teaches that the filter elements **15** and **16** (having lower end cap **18** and upper end cap **25**, respectively) are biased *away from one another*. For example, "The wave form spring **23** acts as an antivibration device biasing the elements **15** and **16** against the relief valve housing **34** and housing flange **27**, respectively". Thus, the upper element **15** is biased against the relief valve housing **34** (located at the top of the housing) and lower element **16** is biased against the housing flange **27** (located at the bottom of the housing). Accordingly, Pall '923 teaches directly away from the present invention. One skilled in the art would never secure the end caps of the upper and lower elements to one another to form one longer integral element, since Pall '923 teaches biasing the separate upper and lower elements in opposite directions.

The separation element defined by the claims is thus the antithesis of the filter disclosed in Pall '923. According to the claimed invention, a single larger element is formed by securing shorter pack sections via joiner caps. All of the pack sections of this *single element* are *always* subject to the *same* flow conditions, enabling one large element to replace multiple smaller elements with the concomitant advantages set forth in the specification (see, for example, page 49). According to Pall '923, the filter unit comprises a primary filter element **15** and a reserve filter element **16** which "is kept in reserve, quite unused, until the primary element has become plugged" (see column 2, lines 59-64). The separate filter elements **15, 16** are subject to entirely different flow conditions. One skilled in the art reading Pall '923 would never be motivated to join these separate elements **15, 16** into a single larger element, as set forth in the claims.

Additionally, the Examiner characterizes Appellants brief as arguing that the claimed combination of length and interior diameter provides much higher throughput, and alleges this is an obvious result of providing a larger filter. However, as Appellants pointed out in

their brief (pages 5 and 6) increasing the length without increasing the diameter (as shown in the cited references) may result in an undesirably high filter support core pressure differential (i.e., the pressure drop due to the length of the filter flow path axially through the interior of the filter element) and therefore the claimed combination of length and interior diameter *effectively* allows much higher throughputs. None of the cited references even recognize the problem of undesirably high pressure drop when increasing filter length, let alone providing any suggestion of the solution, i.e., of increasing the interior diameter in combination with the length. Indeed, none of the cited references even mention a filter interior diameter.

The Examiner cites the Federal Circuit for the proposition that where the only difference between the prior art and the claims was a recitation of relative dimensions of the claimed device and a device having the claimed relative dimensions would not perform differently than the prior art, the claimed device was not patentably distinct from the prior art device. However, in the presently claimed device, it is the combination of these structural features, i.e., the combination of these two dimensions, that differs from the prior art and not merely a recitation of dimension. It is the *combination of length and diameter* that provides the significant advantages of the present invention and overcomes the drawbacks of prior art filters that increase filter length without increasing the interior diameter. Additionally, the claimed device *does* perform differently than the prior art device. For example, the *combination* of a length of at least 40 inches and an interior diameter of at least 2 inches *effectively* allows much higher throughputs than prior art devices not having the claimed combination of length and interior diameter dimensions.

For the foregoing reasons and for the reasons stated in Applicants' main Brief, it is requested that this Board overrule the Examiner's rejections.

Respectfully submitted,

Shannon Schemel

Shannon Schemel, Reg. No. 47,926
LEYDIG, VOIT & MAYER
700 Thirteenth Street, N.W., Suite 300
Washington, DC 20005-3960
(202) 737-6770 (telephone)
(202) 737-6776 (facsimile)

Date: October 16, 2003
SDS